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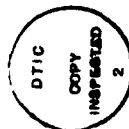
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April 1982

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## IS COMPETITION THE ANSWER?

Joseph P. Newhouse[1]

✓ Proposals for more price competition in medical services delivery have arisen on both sides of the Atlantic. Perhaps the most visible pro-competition spokesman in the United States is Alain Enthoven (1978, 1980), but other names are also prominently associated with the concept (McClure 1978, Havighurst 1980, President's Commission 1980, Greenberg 1981). Recently, legislation to promote competition has been introduced in the United States Congress. Periodically, individuals in other parts of the world also unfurl the banner of competition (Lees 1961, Stahl, in press). The remarks that follow are limited to the American context for brevity; some of them would have to be altered in other institutional contexts. ✓

The advocates of competition base their case on the following arguments. Insurance to protect against large hospital bills--and physician bills while in the hospital--is widely desired and provided. Standard insurance permits choice of any hospital and physician, with reimbursement typically complete or nearly so. Thus, patients receive little or no advantage from seeking out a cheaper hospital and attending physician. As a result, hospitals do not compete on the basis of price. Furthermore, assuming the insurance company reimburses "usual and

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[1] The Rand Corporation. This essay was supported by the Health Insurance Study grant from the U.S. Department of Health and Human Services to The Rand Corporation; the opinion and conclusions expressed herein are solely those of the author and should not be construed as reflecting the opinions or policy of any agency of the United States Government or The Rand Corporation.

customary" rates, fee-for-service physicians will seek to deliver inpatient services until the marginal product of the service is quite low, or even zero, leading to what Enthoven calls "flat-of-the-curve" medicine.

As a result of these facts, many countries have either constrained the resources in the private medical care delivery system or publicly produced medical services. The advocates of competition indict direct public sector control of prices, capacity, or utilization on several counts; Enthoven (1978), for example, argues that a system regulated in this manner will respond to provider rather than consumer interests, impose barriers to the introduction of change, operate inefficiently, and produce a uniform product.

Instead of such regulation, Enthoven and others advocate competition among organized systems. A health maintenance organization plan, such as the Kaiser-Permanente Health Care Plan, is usually cited when an example is requested, but the key features of competition appear to reduce to the following: The subscriber pays a given group of providers (or even a single provider) a fixed amount per unit of time (capitation); in return, the group supplies "necessary" medical services. (Necessary is in quotation marks because the precise contract is not very explicit in specifying exactly which services will be supplied under which circumstances; put another way, the nature of any rationing is not well defined. The advocates of competition do not see this as a problem, however. They argue that the individual over time will gain familiarity with the provider group, and all provider groups will gain reputations for their products (rationing methods), just as the Kaiser-

Permanente group has a reputation for its services.) Sometimes it is advocated that the fixed payment per unit of time go to an insurance company, rather than to providers directly (e.g., Greenberg 1981).

The advocates of competition argue that competition among organized systems will lead to efficient production of medical services and may lower resources devoted to medical care, as would be appropriate if there were a good bit of flat-of-the-curve medicine. Adverse consequences for low income groups can be averted by giving everyone a voucher whose value might fall as income increases.

The process can be shown in somewhat more formal terms. Under competition, price should equal average cost. Let  $AC_i = \sum_j p_{ij} q_{ij} / N_i$ , where  $AC_i$  is the average cost of the  $i^{th}$  provider group,  $p_{ij}$  is the average cost of the  $j^{th}$  procedure at the  $i^{th}$  group,  $q_{ij}$  is the quantity of the  $j^{th}$  procedure that the  $i^{th}$  group delivers, and  $N_i$  are the number of members of the  $i^{th}$  group. The equation is an accounting identity, but offers some insight into the problem that might develop with competition.

Letting  $V_k$  be the value of the voucher that the  $k^{th}$  consumer might be issued, the price to the  $k^{th}$  consumer of the  $i^{th}$  provider group is  $AC_i - V_k$ . (In Greenberg's scheme  $V_k$  would be the value of the tax credit for insurers who maintained a certain rate of increase of cost.) Hence, each provider group has an incentive to minimize  $AC_i$ . This is, of course, exactly the reason competition is said to increase efficiency.  $AC_i$  can be minimized by minimizing  $p_{ij}$  and  $q_{ij}/N_i$ . No one (except the owners of those factors that receive rents!) can quarrel with the goal of minimizing  $p_{ij}$  (holding quality constant). Insofar as

$p_{ij}$  is not minimized, there is technical inefficiency in the production of procedures, managerial slack, or rents to factors. Indeed, competition in its standard textbook version is designed to minimize  $p_{ij}$ .

The potential trouble comes with the minimization of  $q_{ij}/N_i$ . The advocates of competition tend to speak of the minimization of  $q_{ij}/N_i$  as markedly reducing or eliminating flat-of-the-curve medicine. They argue that the desire to attract patients will lead competing providers to not deliver "unnecessary" surgery, not perform tests with virtually no information content, and not advise revisits that have almost no marginal product. Rather, for any given patient, they will stop somewhat short of that. They will, however, provide "enough" services, because consumers will otherwise learn that the  $i^{\text{th}}$  group stints on services and avoid the group. Ideally, the cost of the marginal service provided by the competing provider will equal the consumer's marginal willingness to pay for that service.

Groups, however, can do more than minimize  $q_{ij}/N_i$  for any given patient. Because patients differ in the amount of services they demand ("need," "require"), groups can minimize  $AC_i$  by selecting "healthy" patients, i.e., patients who can be expected to receive fewer services than average ( $q_{ijk} < q_{ij}/N_i$ ).

The incentive to skim the patient cream has, of course, occurred to the advocates of competition. Enthoven makes two responses to it: first, to rate patients actuarially, for example, premiums charged could rise with age; and second, to enact regulations that will preclude organized groups from selecting healthy individuals--so-called pro-competitive regulations. But will these measures suffice?

The actuarial rating of patients will take place on the basis of age and sex, and possibly some other readily measurable characteristics. Such rating is highly unlikely to eliminate all systematic variation in medical demand. Not only will within age-sex group variation remain, some of that variation will be person-specific and stable over time. In other words, it will be predictable. The more this component dominates residual variance, the greater the ability to select patients will be. Using Health Insurance Study data (Duan, Manning, Morris, Newhouse, 1982) as an example, the person-specific variance component accounts for around 25 percent of the residual variation in the demand for ambulatory care given that some care is demanded; variance attributable to insurance plan, age, sex, race, education, geographic location, and initial self-rated health status are not in the residual. The predictable component of demand for services will be revealed to the provider group once the patient is enrolled, and the group will then have an incentive to persuade certain members to disenroll.

In sum, actuarial rating will accomplish two things. By reducing the variance across people, it will reduce the incentive to cream, but almost surely some incentive will remain. Moreover, it will change the identity of those patients in the cream; i.e., the cream will consist of those patients for whom  $q_{ijk}$  is less than the subgroup average.

The second defense is regulation designed to prevent cream skimming at the time of enrollment. For example, all those who wish to enroll in a given group would be enrolled or some subset would be chosen on a non-discriminatory basis. Even assuming such a regulation can be enforced at negligible cost, as seems reasonable based on current

experience with multi-option plans, the issue of disenrollment remains.

Consider a mother with an asthmatic child. Periodically the child has an asthmatic attack; let us also suppose the child is on daily medication to prevent asthmatic attacks. This child's demand for services is likely to exceed his or her age group's average, perhaps greatly; suppose for simplification that the mother's demand is average. Let us assume that the mother and child have enrolled in the group of their choice. The group now has a financial incentive to have the mother and child disenroll. By doing so, the group can reduce  $AC_i$  (because the mother and child together have above average costs).

How could the mother and child be persuaded to disenroll? It is not hard to imagine some of the many ways that a physician could behave so as to convince the mother that she really wanted to take the child elsewhere. The mother could be kept waiting for an appointment or could be kept waiting in the office; the physician could be rude or impersonal when addressing the mother. In short, given that part of the medical care service is personal interaction with a physician, it is not hard for the physician to alter the quality of that interaction adversely. Moreover, it seems impossible to enforce a regulation that the physician must not act in a manner that will convince the mother that she should go elsewhere; such behavior can be very subtle. But any group to whom the mother turns will have the same incentives; hence, the mother will have a difficult time obtaining care.

Establishing that actuarial rating and open enrollment do not eliminate incentives to select good risks does not, of course, establish that such incentives will be of practical importance. One major com-



ponent of our experience to date is with HMOs; how serious are selection problems in HMOs? Alas, the data are both sparse and conflicting; some studies suggest that HMOs do obtain better risks (Eggers 1980, Luft 1981), while others suggest no important differences (Berki and Ashcraft 1980, Blumberg 1980, Marcus 1981). But current HMOs are relatively few in number; even if they did not exhibit cream-skimming behavior, a full-blown system of competing provider groups could well do so because economic theory suggests a few groups that select good risks could cause the entire system to discriminate.

Such behavior is at the heart of Rothschild and Stiglitz' (1976) model of an idealized insurance market, in which an equilibrium does not exist. Essentially, those who are below average in demand for services (or below their group's average) always have an incentive to form a separate group; the remaining bad risks then will attempt to remerge with the good risks and the process keeps repeating itself. Note that, apart from standard maximizing behavior, this argument requires only that persons know their unobserved variance component (or that their physicians learn it). The argument applies if there is any choice of plan, even if the two plans are identical in their coverage provisions. Experience in the United States Government employees' health plan, which allows choice among various insurance plans, suggests selection can be quite pronounced between "high" and "low" option plans; the extent of selection, if any, within the categories of high or low option plans has not been well established.

One force opposing the financial incentive for providers to discriminate among risks is the medical ethic that the sick shall

receive care independent of financial factors. (This argument, however, does not address the incentive of individuals who are good risks to escape to another group.) Personally, I am skeptical that medical ethics are sufficient to make selection effects unimportant, especially as the number of competing groups expands. Further, present ethics are conditioned by highly insured, fee-for-service medicine. They might change if the entire delivery system were composed of competing provider groups.

Those who believe ethics will triumph over crass materialism might consider an historical analogy. When they were first founded, Blue Cross-Blue Shield plans generally advocated community rating. Families of a given size were all to pay the same premium; the chronically sick would not be penalized. This rationale has clear similarities with the medical ethic that would care for the sick irrespective of financial factors. When commercial insurance carriers entered the health insurance market, they rated groups on the basis of the group's expected costs (experience rating). This threatened Blue Cross' market share, and caused Blue Cross plans to largely abandon community rating.

Analogies also come from other insurance markets. Smallwood (1975) has described a model of the auto insurance market in which premiums vary by risk class. Companies charging low premiums enforce tight underwriting standards; that is, they discriminate in risk selection. The market for individual life insurance appears similar; some companies have a reputation for "tighter" underwriting standards than others.

Thus, one possible outcome is some provider groups charging low premiums and attempting to obtain good risks, while poorer risks are

segregated in groups that pay higher premiums. If such an outcome occurred, it would obviously reduce the present cross-subsidy between the healthy and the chronically ill. Some would object to this reduction; others would welcome it. But in any event greater segregation of risks will weaken price competition among homogeneous risk categories in any local market; there will simply be fewer competitors within each risk class. Whether the possible diminution in competitors is of any practical importance to the effectiveness of competition is an open question.

If some organized groups take the view that the sick need not always be with them, the competitive schemes as now envisioned could well deviate from textbook models of competition. Is there any scheme, in the spirit of competition, that might yield the outcome that the advocates of competition seek? For outpatient services, deductibles seem likely to preserve competition, but most hospitalized patients will exceed usual deductible values. Hence, deductibles are not likely to bring about much price competition in markets for inpatient services. What then for inpatient services?

About a decade ago, Taylor and I put forward the concept of Variable Cost Insurance (Newhouse and Taylor 1970, 1971a, b), a concept that is very close to indemnity insurance (see also Kaplan and Lave 1971). Persons would pay varying premiums depending on the provider selected. Premiums would vary among providers as a function of variation in  $p_{ij}$ , but not as a function of  $q_{ij}/N_i$ . For example, a market basket of admissions might be priced at several hospitals, with the premium varying accordingly. And physicians

might be rated on the basis of their charges for various procedures, with premiums varying according to the physician(s) selected. In such a case, providers have no incentive to select individuals with low demands, and good risks have no incentive to change groups; selection effects should not be a problem.

The advocates of competition may well respond that such an arrangement gives up on curtailing excess surgery and the like, because physicians will not be "penalized" for "excessive"  $q_{ij}/N_i$ . But Pauly (1980) has shown that if fees are sufficiently low, there will be no incentive to deliver excess services. It remains to be seen whether a scheme like Variable Cost Insurance might lead to fee levels that provide little incentive for excess services.

It is true that a scheme such as Variable Cost Insurance has not emerged; indeed, indemnity insurance, with which it bears many analogies, has declined in popularity over time. As a result, one suspects such schemes may be administratively flawed. But if demonstrations of competitive arrangements are to be encouraged, this seems like a promising candidate.

BIBLIOGRAPHY

- Berki, Sylvester, and Marie L. Ashcraft, "HMO Enrollment: Who Joins What and Why: A Review of the Literature," Milbank Memorial Fund Quarterly, Vol. 58, No. 4, 1980, pp. 588-632.
- Blumberg, Mark S., "Health Status and Health Care Use by Type of Private Insurance," Milbank Memorial Fund Quarterly, Vol. 58, No. 4, 1980, pp. 633-655.
- Duan, Naihua, Willard G. Manning, Carl N. Morris, and Joseph P. Newhouse, A Comparison of Alternative Models for the Demand for Medical Care, Rand Corporation R-2754-HHS, January 1982.
- Eggers, Paul, "Risk Differential Between Medicare Beneficiaries Enrolled and Not Enrolled in an HMO," Health Care Financing Review, Vol.1, No.3, Winter 1980, pp. 91-99.
- Enthoven, Alain C., "Consumer Choice Health Plan," New England Journal of Medicine, 298:12 and 13, March 23 and 30, 1978, pp. 650-659 and 709-720.
- Enthoven, Alain, Health Plan; Reading, MA: Addison-Wesley, 1980.
- Greenberg, Warren, "National Health Issues: A Perspective on Cost Containment," Nutley, N.J.: Hoffman-Le Roche, 1981.
- Havighurst, Clark C., "Prospects for Competition Under Health Planning-cum-Regulation," in National Health Insurance: What Now, What Later, What Never?, (ed.) Mark V. Pauly, Washington, D.C.: American Enterprise Institute, 1980.
- Kaplan, Robert S. and Lester B. Lave, "Patient Incentives and Hospital Insurance," Health Services Research, Vol.6, No.4, Winter 1971, pp. 288-300.
- Lees, D.S., Health Through Choice, London: Institute of Economic Affairs, 1961.
- Luft, Harold S., Health Maintenance Organizations: Dimensions of Performance; New York: John Wiley & Sons, 1981.
- Marcus, Alfred C., "Mode of Payment as Predictor of Health Status, Use of Health Services, and Preventive Health Behavior: A Report from the Los Angeles Health Survey," Medical Care, October 1981, Vol. 19, No. 10, pp. 995-1010.
- McClure, Walter, "On Broadening the Definition of and Removing the Regulating Barriers to a Competitive Health Care System," Journal of Health Politics, Policy and Law, Vol. 3, Fall 1978, pp. 303-327.

Newhouse, Joseph P., and Vincent Taylor, "The Subsidy Problem in Hospital Insurance: A Proposal," The Journal of Business, Vol. 43, No. 4, October 1970, pp. 452-456.

Newhouse, Joseph P., and Vincent Taylor, "A New Type of Hospital Insurance," The Journal of Risk and Insurance, Vol. 38, No. 4, December 1971, pp. 604-612(a).

Newhouse, Joseph P., and Vincent Taylor, "How Shall We Pay for Hospital Care?," The Public Interest, No. 23, Spring, 1971(b).

President's Commission for a National Agenda for the Eighties, A National Agenda for the Eighties; Washington, D.C.: Government Printing Office, 1980.

Rothschild, Michael, and Joseph Stiglitz, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," Quarterly Journal of Economics; Vol. 90, No. 4, November 1976, pp. 629-649.

Smallwood, Dennis E., "Competition, Regulation, and Product Quality in the Automobile Insurance Industry," in Promoting Competition in Regulated Markets, (ed.) Almarin Phillips; Washington, D.C.: The Brookings Institution, 1975.

Stahl, Ingemar, "Can Equity and Efficiency be Combined: The Experience of the Planned Swedish Health Care System," in Health Care: Professional Ethics, Government Regulation, or Markets? (ed.) Mancur Olson; Washington, D.C.: American Enterprise Institute, in press.

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